**PCMS MESSAGE:** TRAFFIC BACKUPS PRESENT / WATCH FOR SLOW TRAFFIC

1. IF TRAFFIC QUEUES REACH 8 MILES, PLACE ADDITIONAL PCMS AT 9 MILES. RELOCATE TO REMAIN 0.5+/- MILE IN ADVANCE OF QUEUE.

5. LOCATE PCMS PER STANDARD SPECIFICATION 1-10.3(3)C. PCMS MAY BE PLACED ON OPPOSITE SHOULDER BUT AVOID RAMP GORES. WHEN LOCATED BEHIND SIGNS OR OTHER TRAFFIC CONTROL DEVICES, NARROW SHOULDERS, AND RAMPS.

8. LOCATE SIDE FIRE TRAFFIC SENSOR PRIOR TO ANY OPEN RAMPS.

10. IF TRAFFIC QUEUES REACH 8 MILES PLACE ADDITIONAL PCMS AT 9 MILES. IN ADDITION TO REMAIN 0.5+/- MILE IN ADVANCE OF QUEUE TRUCK-MOUNTED PCMS WITH 10+ CHARACTERS ACCEPTABLE TRANSVERSE TRAFFIC SAFETY DRUMS OPTIONAL. REMOVE PCMS WHEN DISSIPATING QUEUES ARE LESS THAN 8 MILES. PCMS MESSAGE TRAFFIC BUCKS UP TO REPLACE SLOW TRAFFIC CONDITION.

**WARNING:** PCS NOT TO BE USED TO DECLARE OR END A WORK ZONE. PCS ARE TO BE USED DURING A WORK ZONE.

**NOTE:**
1. THIS PLAN IS USED IN CONJUNCTION WITH APPLICABLE 3 LANE FREQUENT DOUBLE LEFT LANE CLOSURE TRAFFIC CONTROL PLAN (WITH 11PCMS IN ADVANCE OF LANE CLOSURE TAPER REMOVED).
2. SEE SMART WORK ZONE SYSTEM (SWZS) SPECIAL PROVISION OR RFP FOR DETAILS.
3. MODIFICATIONS TO PCMS MESSAGES SHALL BE ACCEPTED BY THE ENGINEER. WHERE MODIFICATIONS ARE NEEDED.
4. ADJUST SIGNS COMPONENTS TO AVOID CONFLICTS WITH SEGMENTAL ARROW SIGNS OR OTHER TRAFFIC CONTROL DEVICES, NARROW SHOULDERS, AND RAMPS.
5. LOCATE PCMS PER STANDARD SPECIFICATION 1-10.3(3)C. PCMS MAY BE PLACED ON OPPOSITE SHOULDER BUT AVOID RAMP GORES. WHEN LOCATED BEHIND SIGNS OR OTHER TRAFFIC CONTROL DEVICES, NARROW SHOULDERS, AND RAMPS.
6. MINUTE PCMS (-FORM 12 inch characters) ALLOWED FOR PCMS 1-2. IF TRAFFIC TIME REQUIREMENTS FOR TRANSVERSE TRAFFIC DRUMS OPTIONAL.

10. IF TRAFFIC QUEUES REACH 8 MILES, PLACE ADDITIONAL PCMS AT 9 MILES. RELOCATE TO REMAIN 0.5+/- MILE IN ADVANCE OF QUEUE.

12. IF TRAFFIC TIME REQUIREMENTS FOR TRANSVERSE TRAFFIC DRUMS OPTIONAL.

8. LOCATE SIDE FIRE TRAFFIC SENSOR PRIOR TO ANY OPEN RAMPS.

10. IF TRAFFIC QUEUES REACH 8 MILES PLACE ADDITIONAL PCMS AT 9 MILES. IN ADDITION TO REMAIN 0.5+/- MILE IN ADVANCE OF QUEUE TRUCK-MOUNTED PCMS WITH 10+ CHARACTERS ACCEPTABLE TRANSVERSE TRAFFIC SAFETY DRUMS OPTIONAL. REMOVE PCMS WHEN DISSIPATING QUEUES ARE LESS THAN 8 MILES. PCMS MESSAGE TRAFFIC BUCKS UP TO REPLACE SLOW TRAFFIC CONDITION.

**WARNING:** PCS NOT TO BE USED TO DECLARE OR END A WORK ZONE. PCS ARE TO BE USED DURING A WORK ZONE.

**NOTE:**
1. THIS PLAN IS USED IN CONJUNCTION WITH APPLICABLE 3 LANE FREQUENT DOUBLE LEFT LANE CLOSURE TRAFFIC CONTROL PLAN (WITH 11PCMS IN ADVANCE OF LANE CLOSURE TAPER REMOVED).
2. SEE SMART WORK ZONE SYSTEM (SWZS) SPECIAL PROVISION OR RFP FOR DETAILS.
3. MODIFICATIONS TO PCMS MESSAGES SHALL BE ACCEPTED BY THE ENGINEER. WHERE MODIFICATIONS ARE NEEDED.
4. ADJUST SIGNS COMPONENTS TO AVOID CONFLICTS WITH SEGMENTAL ARROW SIGNS OR OTHER TRAFFIC CONTROL DEVICES, NARROW SHOULDERS, AND RAMPS.
5. LOCATE PCMS PER STANDARD SPECIFICATION 1-10.3(3)C. PCMS MAY BE PLACED ON OPPOSITE SHOULDER BUT AVOID RAMP GORES. WHEN LOCATED BEHIND SIGNS OR OTHER TRAFFIC CONTROL DEVICES, NARROW SHOULDERS, AND RAMPS.
6. MINUTE PCMS (-FORM 12 inch characters) ALLOWED FOR PCMS 1-2. IF TRAFFIC TIME REQUIREMENTS FOR TRANSVERSE TRAFFIC DRUMS OPTIONAL.

10. IF TRAFFIC QUEUES REACH 8 MILES, PLACE ADDITIONAL PCMS AT 9 MILES. RELOCATE TO REMAIN 0.5+/- MILE IN ADVANCE OF QUEUE.

12. IF TRAFFIC TIME REQUIREMENTS FOR TRANSVERSE TRAFFIC DRUMS OPTIONAL.

8. LOCATE SIDE FIRE TRAFFIC SENSOR PRIOR TO ANY OPEN RAMPS.

10. IF TRAFFIC QUEUES REACH 8 MILES PLACE ADDITIONAL PCMS AT 9 MILES. IN ADDITION TO REMAIN 0.5+/- MILE IN ADVANCE OF QUEUE TRUCK-MOUNTED PCMS WITH 10+ CHARACTERS ACCEPTABLE TRANSVERSE TRAFFIC SAFETY DRUMS OPTIONAL. REMOVE PCMS WHEN DISSIPATING QUEUES ARE LESS THAN 8 MILES. PCMS MESSAGE TRAFFIC BUCKS UP TO REPLACE SLOW TRAFFIC CONDITION.

**WARNING:** PCS NOT TO BE USED TO DECLARE OR END A WORK ZONE. PCS ARE TO BE USED DURING A WORK ZONE.
1. This plan is used in conjunction with applicable 1.5-LANE
   FREQUENT SINGLE LEFT LANE CLOSURE TRAFFIC CONTROL PLAN
   (with PCMs in advance of lane closure taper removed).
2. See Smart Work Zone System Special Provision or RP for details.
3. Modifications to FOMS messages shall be accepted by the Engineer
   if they are changeable values based on real-time travel delay times.
4. Adjust signs components to avoid conflicts with sequential arrow
   signs or other traffic control devices. Narrow shoulders and ramps
5. Locate FOMS per standard specification 1.5-LANE PCMs may be placed
   on opposite shoulders but avoid ramps where located being
   barrieled, or within closure. Transverse traffic drums optional.
6. Minute PCMs (-15m to 15m) are for use for 1.2
   (US) or 1.5m (INT) time to merge. Alternate method is to use
   single traffic sensor speed data is acceptable when accurate within 5+/-
   MINUTES.
7. Locate single fire traffic sensor prior to any open ramps.
8. If system fails see Smart Work Zone System Failure Protocol Provision.
9. If traffic queues reach 8 miles place additional PCMs at
   10+ miles. Locate PCMs to remain 2.4 to 3.4 miles in advance of
   queue. Truck-mounted PCMs with 10+ inches characters acceptable.
   Transverse traffic safety drums optional. Remove ramps when
   dissipating queues are less than 8 miles. PMG message traffic
   merges present. Switch for slow traffic

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**LEGEND**

- **TRAFFIC SAFETY DRUM**
- **SIGNAL TRAFFIC SENSOR**
- **PORTABLE TRAVEL TIME READER**
- **SEQUENTIAL ARROW SIGN**
- **PORTABLE CHANGEABLE MESSAGE SIGN**
- **PLAN/FILM/ZOOM CAMERA**

**9-MILE SMART WORK ZONE SYSTEM**

**FREEWAY (3 LANES): SINGLE LEFT LANE CLOSURE**

**NOT TO SCALE**
1. This plan is used in conjunction with applicable 3-lane pregnancy double left lane closure traffic control plan.

2. Modifications to PCs messages shall be accepted by the Engineer if they are changeable based on real-time travel delay times.

3. The system is used with sequential arrow signs or other traffic control devices.

4. Adjust signs components to avoid conflicts with sequential arrow signs or other traffic control devices.

5. If traffic queues reach 8 miles, place additional PCs at 9 miles.

6. If system fails, see "Smart Work Zone System Failure Protocol".

7. Traffic sensors are changeable based on real-time travel delay times.

8. See notes for additional details.

9. If traffic queues reach 6 miles, place additional PCs at 7 miles.

10. If traffic queues reach 4.5 miles, use zipper merges here.

11. If traffic queues reach 3.5 miles, use zipper merges here.

12. If traffic queues reach 2.5 miles, use zipper merges here.

13. If traffic queues reach 1.5 miles, use zipper merges here.

14. If traffic queues reach 0.5 miles, use zipper merges here.

15. If traffic queues reach 0 miles, use zipper merges here.

16. If traffic queues reach 50 feet, use zipper merges here.

17. If traffic queues reach 100 feet, use zipper merges here.

18. If traffic queues reach 200 feet, use zipper merges here.

19. If traffic queues reach 300 feet, use zipper merges here.

20. If traffic queues reach 400 feet, use zipper merges here.

21. If traffic queues reach 500 feet, use zipper merges here.

22. If traffic queues reach 600 feet, use zipper merges here.

23. If traffic queues reach 700 feet, use zipper merges here.

24. If traffic queues reach 800 feet, use zipper merges here.

25. If traffic queues reach 900 feet, use zipper merges here.

26. If traffic queues reach 1000 feet, use zipper merges here.

27. If traffic queues reach 1100 feet, use zipper merges here.

28. If traffic queues reach 1200 feet, use zipper merges here.

29. If traffic queues reach 1300 feet, use zipper merges here.

30. If traffic queues reach 1400 feet, use zipper merges here.

31. If traffic queues reach 1500 feet, use zipper merges here.

32. If traffic queues reach 1600 feet, use zipper merges here.

33. If traffic queues reach 1700 feet, use zipper merges here.

34. If traffic queues reach 1800 feet, use zipper merges here.

35. If traffic queues reach 1900 feet, use zipper merges here.

36. If traffic queues reach 2000 feet, use zipper merges here.

37. If traffic queues reach 2100 feet, use zipper merges here.

38. If traffic queues reach 2200 feet, use zipper merges here.

39. If traffic queues reach 2300 feet, use zipper merges here.

40. If traffic queues reach 2400 feet, use zipper merges here.

41. If traffic queues reach 2500 feet, use zipper merges here.

42. If traffic queues reach 2600 feet, use zipper merges here.

43. If traffic queues reach 2700 feet, use zipper merges here.

44. If traffic queues reach 2800 feet, use zipper merges here.

45. If traffic queues reach 2900 feet, use zipper merges here.

46. If traffic queues reach 3000 feet, use zipper merges here.

47. If traffic queues reach 3100 feet, use zipper merges here.

48. If traffic queues reach 3200 feet, use zipper merges here.

49. If traffic queues reach 3300 feet, use zipper merges here.

50. If traffic queues reach 3400 feet, use zipper merges here.

51. If traffic queues reach 3500 feet, use zipper merges here.

52. If traffic queues reach 3600 feet, use zipper merges here.

53. If traffic queues reach 3700 feet, use zipper merges here.

54. If traffic queues reach 3800 feet, use zipper merges here.

55. If traffic queues reach 3900 feet, use zipper merges here.

56. If traffic queues reach 4000 feet, use zipper merges here.

57. If traffic queues reach 4100 feet, use zipper merges here.

58. If traffic queues reach 4200 feet, use zipper merges here.

59. If traffic queues reach 4300 feet, use zipper merges here.

60. If traffic queues reach 4400 feet, use zipper merges here.

61. If traffic queues reach 4500 feet, use zipper merges here.

62. If traffic queues reach 4600 feet, use zipper merges here.

63. If traffic queues reach 4700 feet, use zipper merges here.

64. If traffic queues reach 4800 feet, use zipper merges here.

65. If traffic queues reach 4900 feet, use zipper merges here.

66. If traffic queues reach 5000 feet, use zipper merges here.

67. If traffic queues reach 5100 feet, use zipper merges here.

68. If traffic queues reach 5200 feet, use zipper merges here.

69. If traffic queues reach 5300 feet, use zipper merges here.

70. If traffic queues reach 5400 feet, use zipper merges here.

71. If traffic queues reach 5500 feet, use zipper merges here.

72. If traffic queues reach 5600 feet, use zipper merges here.

73. If traffic queues reach 5700 feet, use zipper merges here.

74. If traffic queues reach 5800 feet, use zipper merges here.

75. If traffic queues reach 5900 feet, use zipper merges here.

76. If traffic queues reach 6000 feet, use zipper merges here.

77. If traffic queues reach 6100 feet, use zipper merges here.

78. If traffic queues reach 6200 feet, use zipper merges here.

79. If traffic queues reach 6300 feet, use zipper merges here.

80. If traffic queues reach 6400 feet, use zipper merges here.

81. If traffic queues reach 6500 feet, use zipper merges here.

82. If traffic queues reach 6600 feet, use zipper merges here.

83. If traffic queues reach 6700 feet, use zipper merges here.

84. If traffic queues reach 6800 feet, use zipper merges here.

85. If traffic queues reach 6900 feet, use zipper merges here.

86. If traffic queues reach 7000 feet, use zipper merges here.

87. If traffic queues reach 7100 feet, use zipper merges here.

88. If traffic queues reach 7200 feet, use zipper merges here.

89. If traffic queues reach 7300 feet, use zipper merges here.

90. If traffic queues reach 7400 feet, use zipper merges here.

91. If traffic queues reach 7500 feet, use zipper merges here.

92. If traffic queues reach 7600 feet, use zipper merges here.

93. If traffic queues reach 7700 feet, use zipper merges here.

94. If traffic queues reach 7800 feet, use zipper merges here.

95. If traffic queues reach 7900 feet, use zipper merges here.

96. If traffic queues reach 8000 feet, use zipper merges here.

97. If traffic queues reach 8100 feet, use zipper merges here.

98. If traffic queues reach 8200 feet, use zipper merges here.

99. If traffic queues reach 8300 feet, use zipper merges here.

100. If traffic queues reach 8400 feet, use zipper merges here.

101. If traffic queues reach 8500 feet, use zipper merges here.

102. If traffic queues reach 8600 feet, use zipper merges here.

103. If traffic queues reach 8700 feet, use zipper merges here.

104. If traffic queues reach 8800 feet, use zipper merges here.

105. If traffic queues reach 8900 feet, use zipper merges here.

106. If traffic queues reach 9000 feet, use zipper merges here.

107. If traffic queues reach 9100 feet, use zipper merges here.

108. If traffic queues reach 9200 feet, use zipper merges here.

109. If traffic queues reach 9300 feet, use zipper merges here.

110. If traffic queues reach 9400 feet, use zipper merges here.

111. If traffic queues reach 9500 feet, use zipper merges here.

112. If traffic queues reach 9600 feet, use zipper merges here.

113. If traffic queues reach 9700 feet, use zipper merges here.

114. If traffic queues reach 9800 feet, use zipper merges here.

115. If traffic queues reach 9900 feet, use zipper merges here.

116. If traffic queues reach 10000 feet, use zipper merges here.
REGION TRAFFIC OFFICES WILL DETERMINE IF SMART WORK ZONE SYSTEMS ARE NEEDED FOR EACH PROJECT USING WORK ZONE TRAFFIC ANALYSIS FOR MORE INFORMATION SEE TRAFFIC MANUAL SECTION 5-17.A "Work Zone Queueing Mitigation" AND SECTION 5-9 "Work Zone Traffic Analysis".

A. FOR DESIGN-BID-BUILD PROJECTS, INCLUDE 3 OF THE "SMART WORK ZONE SYSTEM" GENERAL SPECIAL PROVISIONS LISTED BELOW:
1-10.3(3).OPT1.FR1 Specifications
1-10.4(2).OPT5.GR1 Measurement (Traffic Control as Bid Items)
1-10.4(3).OPT2.GR1 Measurement (Traffic Control as Lump Sum)
1-10.5(2).OPT3.GR1 Payment

B. FOR DESIGN-BUILD PROJECTS: EMAIL STATE WORK ZONE ENGINEERS (HQWORKZONE@WSDOT.WA.GOV) FOR RFP SPECIFICATIONS UNTIL THEY ARE INCLUDED IN THE STATE-WIDE RFP TEMPLATE (ESTIMATED 2023).

C. IF ACTUAL QUEUES REGULARLY EXCEED 9 MILES, THIS SMART WORK ZONE SYSTEM SHOULD BE MODIFIED. CONTACT STATE WORK ZONE ENGINEERS (HQWORKZONE@WSDOT.WA.GOV) FOR GUIDANCE.

D. TO MATCH THE GENERAL SPECIAL PROVISIONS, TRAFFIC SAFETY DRUMS SHOULD BE USED AS SHOWN IN THE TRAFFIC CONTROL PLAN. HOWEVER, THE GSP AND TYPICAL TRAFFIC CONTROL PLAN CAN BE MODIFIED TO REFLECT REGION'S STANDARD PRACTICE REGARDING CHANNELIZATION DEVICES.

E. EXCEPT FOR DESIGN-BUILD PROJECTS WHEN THE RFP REQUIRES THEM, PAN-TILT-ZOOM CAMERAS (PTZ CAMERAS) ARE OPTIONAL AND MAY BE DELETED OR RELOCATED TO DIFFERENT PCMs AS DESIRED. THE PTZ CAMERAS ARE INTENDED TO BE USED REMOTELY BY THE REGION TRAFFIC MANAGEMENT CENTER TO MONITOR INCIDENTS AND QUEUING IN REAL TIME.

F. THE SIDE-FIRE RADAR IS USED TO OBTAIN VOLUME AND SPEED DATA PER GSP/RFP REQUIREMENTS. THE TRAFFIC SENSORS ARE TYPICALLY DOPPLER RADAR AND USED TO CONTROL THE PCMS MESSAGE DISPLAYS.

MODIFYING SMART WORK ZONE SYSTEM TRAFFIC CONTROL PLANS

THESE TRAFFIC CONTROL PLANS ARE TYPICAL AND MAY BE MODIFIED FOR SITE SPECIFIC SITUATIONS AND/OR WSDOT REGION TRAFFIC PRACTICES. CONTACT STATE WORK ZONE ENGINEERS (HQWORKZONE@WSDOT.WA.GOV) FOR ADDITIONAL GUIDANCE IF NEEDED.

THESE SMART WORK ZONE SYSTEMS ARE VERY ADAPTABLE TO A VARIETY OF SITUATIONS, INCLUDING BEING USED ON MULTIPLE ROADWAYS CONCURRENTLY LEADING INTO A QUEUED WORK ZONE.